

TECHNOLOGY NEEDS/OPPORTUNITIES STATEMENT NEW LUBRICANTS FOR THE S&M PROGRAM

Identification No.: RL-DD068

Date: August 2001

Program: Surveillance and Maintenance

OPS Office/Site: Richland Operations Office/ Hanford Site

PBS No.: RL-CP01

Waste Stream: N/A

TSD Title: N/A

Waste Management Unit (if applicable): N/A

Facility: All facilities with active ventilation

Priority Rating: This entry addresses the Accelerated Cleanup: Paths to Closure (ACPC) Priority:

- _____ 1. Critical to the success of the Accelerated Cleanup: Paths to Closure (ACPC)
- _____ 2. Provides substantial benefit to the ACPC projects (e.g., moderate to high lifecycle cost savings or risk reduction, increased likelihood of compliance, increased assurance to avoid schedule delays)
- X 3. Provides opportunities for significant, but lower cost savings or risk reduction, and may reduce uncertainty in ACPC project success.

Need Title: New lubricants for rotating equipment that support the Surveillance and Maintenance (S&M) Program.

Need/Opportunity Category: *Technology opportunity* - the project desires an alternative to the current or planned baseline technology/process (i.e., a baseline exists but can be improved).

Need Description: Operating equipment addressed by this need consists of ventilation equipment, such as exhaust fans and air compressors, used to maintain negative pressure within contaminated facilities. Much of the equipment is past its expected operating life, but continues to aid in maintaining safe conditions within buildings. New lubricants are needed to further extend the life of the equipment in order to avoid the cost of equipment replacement in facilities awaiting decommissioning.

Schedule Requirements:

Earliest Date Required: 10/1/2001

Latest Date Required: This is an ongoing need.

Problem Description: The operating equipment in the S&M Program (i.e., exhaust fans and air compressors) are approximately 50 years old and will be run to failure. However, the operating systems are needed to maintain safe conditions within the facilities of the S&M Program. Prolonging the lives of the current equipment will avoid the need to replace equipment on facilities that will be entering the decommissioning program.

Benefit to the Project Baseline of Filling Need: Meeting this need results in minimizing the risk of contamination release and in avoiding the cost of equipment replacement.

Functional Performance Requirements: Lubricants must have a minimum expected life of six months.

WBS No.

1.4.03.3.1.02.05.03 and
1.4.03.3.1.01.05.03

TIP No.

N/A

Relevant PBS Milestone: PBS-MC-030

Justification for Need:

Technical: Some of the operating equipment has been operating continuously for approximately 50 years.

Regulatory: TPA requires maintaining equipment and facilities in a safe condition until final disposition can be achieved.

Environmental Safety & Health: Maintaining proper ventilation minimizes the potential for contaminant release.

Cost Savings Potential (Mortgage Reduction): The rough order of magnitude (ROM) potential life cycle cost (LCC) savings associated with lubrication of the fans is \$1M. The LCC savings estimate is based upon the assumption that the number of lubrications per year could be reduced by half, an annual cost of \$50K for the current lubricating schedule (estimated by the project), accumulated over 46 years of surveillance and maintenance. The cost of replacing equipment would also be avoided, but has not been included in the LCC estimate.

Cultural/Stakeholder Concerns: Loss of ventilation may result in loss of contamination containment.

Other: None identified.

Current Baseline Technology: Silicone based lubricants/greases

End User: Environmental Restoration Project

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